PROJECT NUMBER: 1101
PROJECT TITLE: Entomological Research
PROJECT LEADER: D. L. Faustini
PERIOD COVERED: July, 1987

I. CIGARETTE BEETLE (CB) PHYSIOLOGICAL STUDIES

A. Objective: To conduct research investigations designed to produce results that lead to the control of the CB growth and development.

B. Results: Methoprene and hydroprene treated liners did not appear to control the CB based upon examination of the tobacco contained within the liners. A substantial number of F1 generation emergence occurred 3 months after CB exposure.

The effects of the Dec. 1986 winter PH_3 fumigation have shown that CB emergence in 1987 was affected. Trap records showed 140 CB for 1987 and 104,000 CB for 1986 prior to the July fumigation period. This indicates that cold weather fumigation kills the overwintering larva and therefore reduces the biotic potential (e.g., subsequent generations).

Warehouse temperature studies indicate the CB emergence occurs when the commodity temperature reaches 70°F. Ambient temperature does not appear to differ from a hogshead at 16' or 4'; however, temperature differences do occur between hogsheads at these heights.

E. References:

S. Drew, Notebook No. 7850, pp. 190-194.

M. Minor, Notebook No. 8360, p. 51.

M. Minor. Comparison of trap counts during prefumigation period of 1986 and 1987. Memo to D. L. Faustini. July 21, 1987.

II. SERVICE TO OTHERS

A. Objective: To conduct and provide technical services to areas outside R&D.

B. Results: One hundred percent CB mortality was achieved at the 20th Street tobacco conditioning chambers employed for Phytosanitary Certification of export tobacco.

Phosphine treatment of export cut filler in Tyvek® bags yielded 100% CB mortality of all life stages tested.

Assistance was provided to QA for the July fumigation at Leaf Storage facilities in Richmond, Cabarrus and Louisville. R&D monitored contractor activities and gathered data on wet deactivation method of phosphine residues.

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A recommendation was made to QA-Louisville to eliminate the use of blacklight traps as the method to determine CB infestations. Infestations should be monitored using pheromone.

C. **References**:

Deubler, R. C. Memo to D. T. Wagner. Documentation of Beetle Kill at 19th and 20th Streets. July 13, 1987.

J. Machett. Memo to Distribution. MT in Boxes. July 22, 1987.

Faustini, D. L. Memo to D. W. Hardin. Blacklight Trap Use in the M/C Environment. July 22, 1987.

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